No. 22-1286

IN THE
United States Court of Appeals
for the Federal Circuit

TERADATA CORP., TERADATA US, INC., and TERADATA OPERATIONS, INC.,
Plaintiffs-Appellants,

v.

SAP SE, SAP AMERICA, INC., and SAP LABS, LLC,
Defendants-Appellees.

On Appeal from the
United States District Court for the Northern District of California
Honorable William H. Orrick
No. 18-cv-03670-WHO

CORRECTED BRIEF FOR THE UNITED STATES OF AMERICA AND THE FEDERAL TRADE COMMISSION AS AMICI CURIAE IN SUPPORT OF NEITHER PARTY AND IN SUPPORT OF REVERSAL OF APPARENT LEGAL ERRORS ON MARKET DEFINITION

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INTEREST OF AMICI

The United States and the Federal Trade Commission enforce the federal antitrust laws and have a strong interest in their correct interpretation. We file this brief under Federal Rule of Appellate Procedure 29(a) to address apparent legal errors in the district court's framework for defining relevant markets in antitrust cases.

In antitrust cases, market definition is a tool that can help courts ascertain the "locus of competition" in which to judge the challenged conduct, identify market participants, and assess market concentration. *Brown Shoe Co. v. United States*, 370 U.S. 294, 320–21 (1962). It requires "a factual inquiry into the 'commercial realities' faced by consumers." *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 482 (1992). A plaintiff can establish a relevant market using various types of evidence, including through "practical indicia." *Brown Shoe*, 370 U.S. at 325.

Here, however, the district court appears to have adopted an overly rigid approach instead of the flexible inquiry supported by precedent. Such an approach would hinder effective antitrust enforcement by obscuring—rather than illuminating—courts' inquiry into competitive

effects, the "crucial question" in antitrust cases. *United States v. Pabst Brewing Co.*, 384 U.S. 546, 549–50 (1966). We take no position on the merits of plaintiffs' antitrust claims.

STATEMENT OF THE ISSUE

Whether the district court applied an overly rigid framework for defining a relevant market in an antitrust case.

STATEMENT OF THE CASE

A. Factual Background

SAP[1] develops and sells Enterprise Resource Planning software (ERP). Appx2. ERP allows businesses to manage the data required to conduct their day-to-day operations. *Id.* ERP runs on an online transactional processing database and, for certain applications, an online analytical processing database. Appx2–3. Teradata[2] develops and sells a type of online analytical processing database, Enterprise Data Analytics and Warehousing products. Appx2.

In 2009, SAP and Teradata entered into a partnership—the "Bridge Project"—to pair SAP's ERP with a Teradata database. Appx3. That partnership dissolved in 2011 after SAP allegedly stole Teradata's trade secrets and used them to develop an allegedly competing database, SAP HANA (HANA). *Id.*

In February 2015, SAP released an updated version of its ERP, SAP S/4HANA, which was integrated with HANA, and sold as a single

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[1] Defendants/counterclaim-plaintiffs SAP SE, SAP America, Inc., and SAP Labs, LLC, are collectively referred to as "SAP."

[2] Plaintiffs/counterclaim-defendants Teradata Corporation, Teradata US, Inc., and Teradata Operations, Inc., are collectively referred to as "Teradata."

offering. *Id*. Teradata claims that SAP forced users of S/4HANA to use HANA either by making S/4HANA incompatible with other databases or through contractual terms and the pricing of licenses for HANA. Appx48.

B. Procedural Background

1. Teradata brought this suit, alleging, *inter alia*, that SAP illegally tied HANA to S/4HANA in violation of federal antitrust law. In a tying arrangement, the seller conditions the sale of one product (the tying product) on the buyer's purchase of a second product (the tied product). *Cascade Health Sols. v. PeaceHealth*, 515 F.3d 883, 912 (9th Cir. 2008). To prove a per se tying claim—as Teradata alleges under Section 1 of the Sherman Act—a plaintiff must establish (1) that the defendant tied the sale of two distinct products; (2) that the defendant possesses sufficient economic power in the tying-product market to coerce its customers into purchasing the tied product; and (3) that the tying arrangement affects a not insubstantial volume of commerce in the tied product market. *Id.* at 913.

In support of its tying claim, Teradata sought to offer expert testimony from Dr. John Asker, a Professor of Economics at the University of California, Los Angeles. Appx21. Dr. Asker opined, *inter*

alia, that (1) "the relevant product market for the tying market is 'core ERP products for large enterprises'" and (2) the tied market is "EDW [Enterprise Data Analytics and Warehousing] products with OLAP [online analytical processing] capabilities for large enterprises."[3] Appx21. Dr. Asker's "primary methodology" was to review ordinary course business documents and other qualitative evidence. Appx22. He then sought to "corroborate" this qualitative analysis with quantitative analyses. Appx28. Specifically, he conducted an aggregate diversion ratio (ADR) analysis and analyzed SAP's ability to price discriminate in its sale of core ERP products to large enterprises. Appx32.

2. As relevant here, the district court granted SAP's motions to exclude Dr. Asker's testimony and for summary judgment on Teradata's tying claim. The court excluded, *inter alia*, Dr. Asker's opinions on the tying and tied markets, concluding that "Asker's methodology in defining the tying market is unreliable" because it "does not measure the cross-elasticity of demand or the substitutability of products based on reliable quantitative and qualitative analyses." Appx33. The court described

[3] Portions of Dr. Asker's expert report—as well as portions of other expert reports and trial-court filings—remain under seal. This brief is based on an analysis of only the publicly available filings.

cross elasticity of demand as "the most fundamental principle in defining a market," Appx32, and observed that Dr. Asker "does not have an econometric estimation of cross-elasticity," Appx25.

The court also deemed Dr. Asker's quantitative analysis "flawed" because "Asker does not apply a 'hypothetical monopolist' test ('HMT')."[4] Appx28. The court further stated that the ADR analysis used by Dr. Asker "has rarely been accepted by courts." Appx30. Moreover, when ADR analysis has been used, the court explained, the experts "relied on data sets that measured a customer's response to changes in prices, e.g., actual win/loss data or bidding data," *id.*; in contrast, Dr. Asker used Customer Relationship Management (CRM) data, which "does not measure customer responses to changes in price," Appx32. Finally, the court rejected Dr. Asker's price-discrimination analysis. Appx32–33.

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[4] The hypothetical monopolist test, set forth in the Horizontal Merger Guidelines issued by the U.S. Department of Justice and the Federal Trade Commission, asks whether a hypothetical monopolist ("a hypothetical profit-maximizing firm, not subject to price regulation, that was the only present and future seller of [] products [in a candidate market]") "likely would impose at least a small but significant and non-transitory increase in price ('SSNIP') on at least one product in the market." Dep't of Justice & Fed. Trade Comm'n, Horizontal Merger Guidelines § 4.1.1–4.1.2 (2010). If so, the proponent has defined the market broadly enough. *Id.* § 4.1.2.

The court excluded Dr. Asker's opinion on the tied market for "the same reasons." Appx35. The court in turn granted SAP summary judgment on the tying claim, given, *inter alia*, Teradata's failure to define the tying and tied markets. Appx48.

ARGUMENT

Market definition "is not the aim of antitrust law," but instead "merely aids the search for competitive injury." *Oltz v. St. Peter's Cmty. Hosp.*, 861 F.2d 1440, 1448 (9th Cir. 1988).[5] Consequently, courts do not employ a single approach, but instead use those tools and rely on those pieces of evidence that best reveal the areas of competition potentially affected by the challenged conduct. This flexible approach ensures that market definition is not "used to obscure competition but to 'recognize competition where, in fact, competition exists.'" *United States v. Cont'l Can Co.*, 378 U.S. 441, 453 (1964) (quoting *Brown Shoe Co. v. United States*, 370 U.S. 294, 326 (1962)).

In excluding Dr. Asker's market-definition opinions, however, the district court seems to have taken an improper and overly rigid approach to market definition. The court seemingly required a "clear line" separating companies inside and outside the proposed market, Appx28, notwithstanding the Supreme Court's repeated pronouncements that a

[5] This Court generally applies the law of the regional circuit to issues of federal antitrust law, including the assessment of relevant markets. *Nobelpharma AB v. Implant Innovations, Inc.*, 141 F.3d 1059, 1067–68 (Fed. Cir. 1998).

plaintiff need not map the metes and bounds of a relevant market. The court also seems to have erred by requiring (or favoring) certain market-definition tools regardless of the circumstances of and the evidence available in the case at bar. In addition, the court apparently erred by confining the use of "practical indicia" identified in *Brown Shoe* to a subset of cases. Finally, the court appeared to adopt a categorical and incorrect rule about the type of evidence used in ADR analysis, a well-accepted methodology for defining markets.

These rulings would have no basis in law. They could significantly harm effective antitrust enforcement by limiting the evidence available to courts in making fact-specific determinations of relevant markets and by placing unnecessary restrictions on antitrust plaintiffs. This Court should correct any such missteps by the district court.

I. Market Definition Entails a Case-Specific Inquiry into the "Area of Effective Competition"

A. Market definition can help courts determine whether a restraint has anticompetitive effects

Market definition plays an important role in many antitrust cases. Definition of a relevant market can help a court ascertain the "locus of competition" in which anticompetitive effects are to be assessed. *Brown*

Shoe, 370 U.S. at 320–21. Once a market has been defined, a court can identify market participants, assess market concentration, and "evaluate the competitive consequences" of the challenged conduct. *Lucas Auto. Eng'g, Inc. v. Bridgestone/Firestone, Inc.*, 275 F.3d 762, 766 (9th Cir. 2001); Dep't of Justice & Fed. Trade Comm'n, Horizontal Merger Guidelines § 4 (2010) (HMG).

Market definition, however, is not an end in itself. "Defining the market is not the aim of antitrust law; it merely aids the search for competitive injury." *Oltz*, 861 F.2d at 1448. For example, market definition can facilitate an assessment of market power, which is "the power to force a purchaser to do something that he would not do in a competitive market," *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 464 (1992) (internal quotation marks omitted), or to "exclude competition," *United States v. E. I. du Pont de Nemours & Co.*, 351 U.S. 377, 391 (1956). Market power often manifests as "the ability to raise prices above those that would be charged in a competitive market." *NCAA v. Bd. of Regents*, 468 U.S. 85, 109 n.38 (1984). But it can also take other forms, such as the ability to reduce

quality. *Cmty. Publishers, Inc. v. Donrey Corp.,* 892 F. Supp. 1146, 1153 n.8 (E.D. Ark. 1995).

A relevant market is "the area of effective competition," *Tampa Elec. Co. v. Nashville Coal Co.*, 365 U.S. 320, 328 (1961), and typically denotes "[t]he arena within which significant substitution in consumption or production occurs," *Ohio v. Am. Express Co*., 138 S. Ct. 2274, 2285 (2018). A relevant market encompasses "the group or groups of sellers or producers who have actual or potential ability to deprive each other of significant levels of business." *Thurman Indus., Inc. v. Pay 'N Pak Stores, Inc.*, 875 F.2d 1369, 1374 (9th Cir. 1989).

"The area of effective competition is defined in terms of a product market and a geographic market."[6] *Twin City Sportservice, Inc. v. Charles O. Finley & Co., Inc.*, 512 F.2d 1264, 1271 (9th Cir. 1975). The "outer boundaries of a product market are determined by the reasonable interchangeability of use or the cross-elasticity of demand between the product itself and substitutes for it." *Brown Shoe*, 370 U.S. at 325. But

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[6] "The relevant geographic market is the area of effective competition where buyers can turn for alternate sources of supply." *Saint Alphonsus Med. Ctr.-Nampa Inc. v. St. Luke's Health Sys., Ltd.*, 778 F.3d 775, 784 (9th Cir. 2015) (internal quotation marks omitted). Here, Teradata's position that the relevant geographic markets are global is not at issue.

"within this broad market, well-defined submarkets may exist which, in themselves, constitute product markets for antitrust purposes." *Id*.

Importantly, a market should "recognize meaningful competition where it is found to exist," and "its contours must, as nearly as possible, conform to competitive reality." *Cont'l Can*, 378 U.S. at 449, 457. There could be multiple markets defined around the same product in a given case—some broader and some narrower (*e.g.*, a submarket)—because the market must be relevant to the particular legal issue being litigated. *E.g.*, *United States v. H&R Block, Inc.*, 833 F. Supp. 2d 36, 64 (D.D.C. 2011); *cf.* Sean P. Sullivan, *Seven Myths of Market Definition*, Antitrust Chronicle, Spring 2022, at *42 ("[S]ince relevant markets cannot be defined in the abstract, market definition should not be described or attempted outside the context of a specific theory of harm."). For example, in a horizontal merger case, the relevant market is typically "where, within the area of competitive overlap, the effect of the merger on competition will be direct and immediate." *United States v. Philadelphia Nat'l Bank*, 374 U.S. 321, 357 (1963). Likewise, in a conduct case, the relevant market is usually where the challenged restraints have caused or threatened anticompetitive effects. *E.g.*,

Tampa Elec., 365 U.S. at 327–28; *United States v. Microsoft Corp.*, 253 F.3d 34, 54 (D.C. Cir. 2001). Some mergers or other types of conduct threaten competition among a relatively broad set of products, while others might threaten competition in a more targeted area—in which a narrow market may prove more relevant. *See, e.g.*, *FTC v. Hackensack Meridian Health, Inc*., 30 F.4th 160, 169–172 (3d Cir. 2022) (finding Bergen County, New Jersey, a relevant market because insurers cannot market a plan to Bergen County residents that does not include a Bergen County hospital).

Ultimately, the determination of the relevant market necessitates "careful consideration based upon the entire record." *Cont'l Can*, 378 U.S. at 449; *see also Kodak*, 504 U.S. at 482 ("The proper market definition in this case can be determined only after a factual inquiry into the 'commercial realities' faced by consumers."); *cf. NCAA v. Alston*, 141 S. Ct. 2141, 2158 (2021) (noting that, in a rule-of-reason case, "[w]hether an antitrust violation exists necessarily depends on a careful analysis of market realities").

B. Courts employ a variety of market-definition tools

Consistent with this flexible framework, "there is no requirement to use any specific methodology in defining the relevant market." *Optronic Techs., Inc. v. Ningbo Sunny Elec. Co., Ltd.*, 20 F.4th 466, 482 (9th Cir. 2021); *see also Brown Shoe*, 370 U.S. at 320 ("Congress" did not adopt "any particular tests for measuring the relevant markets"). Rather, courts use a variety of market-definition tools, depending on what evidence is available and the particular conduct at issue.

Courts frequently look to "such practical indicia as industry or public recognition of the [market or] submarket as a separate economic entity, the product's peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors," *id.* at 325, commonly denoted the "*Brown Shoe* factors." These factors "express in practical terms the basic economic concept that markets are to be defined in terms of the close substitutability" of products, "since it is ultimately the degree of substitutability that limits the exercise of market power." *United States v. Aluminum Co. of Am.*, 377 U.S. 271, 283 (1964) (Stewart, J., dissenting) (stating uncontested market-definition principles).

A "common method" for defining a relevant market is the hypothetical monopolist test set forth in the federal antitrust enforcement agencies' Horizontal Merger Guidelines. *Saint Alphonsus*, 778 F.3d at 784. Under this framework, a set of products qualifies as a relevant market if a hypothetical monopolist over those products profitably could impose a small but significant and non-transitory price increase on one or more of those products.[7] *Saint Alphonsus*, 778 F.3d at 784. If too many customers would switch to substitute products outside of the proposed market in response to the hypothetical monopolist's price increase, then the proposed relevant market is too narrow and should include additional substitute products. *See supra* note 4 and *infra* p.26. The hypothetical monopolist test can be implemented in a variety of ways, with a variety of types of qualitative or quantitative evidence, including by employing the concepts of critical loss and aggregate diversion ratio. *See* Section III *infra*.

Importantly, while courts distinguish between high-quality and low-quality evidence of the relevant market, they do not require use of a

[7] Courts "often" use the Horizontal Merger Guidelines as "persuasive authority." *Saint Alphonsus*, 778 F.3d at 784 n.9.

particular market-definition tool. For example, "courts routinely rely on qualitative economic evidence to define relevant markets." *McWane, Inc. v. FTC*, 783 F.3d 814, 829 (11th Cir. 2015). Further, "the failure of [a plaintiff] to prove by an army of expert witnesses what constitutes a relevant 'economic' or 'geographic' market is not an adequate ground on which to dismiss [an antitrust] case." *United States v. Pabst Brewing Co.*, 384 U.S. 546, 549–50 (1966). In sum, no "particular test[]" is specifically required for determining the boundaries of a relevant market. *Brown Shoe*, 370 U.S. at 320.

II. The District Court Appeared to Follow an Overly Rigid Approach to Market Definition

In excluding Dr. Asker's market-definition opinions, the district court apparently departed from this flexible framework. The court (1) seemed troubled that Dr. Asker did not have a "clear line" separating companies inside and outside the proposed market, Appx28; (2) confined the *Brown Shoe* factors to a narrow subset of cases, Appx23; and (3) suggested that a quantitative measure of cross elasticity of demand was necessary to prove a market, Appx24–28. None of these holdings would be proper.

First, the district court appeared concerned that Dr. Asker did not strictly demarcate the boundaries of his relevant market; it highlighted "the broad continuum of customers," and seemingly adopted SAP's argument that "there is no clear line separating [large enterprise customers] from others." Appx28. But "the relevant competitive market is not ordinarily susceptible to a 'metes and bounds' definition." *Tampa Elec.*, 365 U.S. at 331; *accord Times-Picayune Publ'g Co. v. United States*, 345 U.S. 594, 611 (1953) ("The 'market,' as most concepts in law or economics, cannot be measured by metes and bounds."). Courts have rejected the proposition that a plaintiff must prove a relevant market "in the same way the corpus delicti must be proved to establish a crime," *Pabst Brewing*, 384 U.S. at 549, and recognized that "[t]he issue of product definition [is] always an inexact science," *Oahu Gas Serv., Inc. v. Pac. Res., Inc.*, 838 F.2d 360, 364 (9th Cir. 1988).

Commonly, there is a continuum of products (or customers) of varying degrees of substitutability for the product(s) at issue in the case. In that circumstance, wherever the court fixes the boundary of the relevant market, products on either side of the line will be relatively close substitutes to each other. But that fact is not an argument against

drawing the line in that place—the primary purpose of market definition is to identify the "locus of competition" potentially affected by the challenged practice, *Brown Shoe*, 370 U.S. at 320, not to parse the outer boundaries of a market. *Cf.* HMG § 4 ("Although excluding more distant substitutes from the market inevitably understates their competitive significance to some degree, doing so often provides a more accurate indicator of the competitive effects of the merger than would the alternative of including them and overstating their competitive significance as proportional to their shares in an expanded market.").

Second, contrary to the district court's apparent understanding, Appx23, the *Brown Shoe* factors are available in any market-definition analysis—not just when a plaintiff alleges a submarket. "Because every market that encompasses less than all products is, in a sense, a submarket," the Ninth Circuit has explained, "these factors are relevant even in determining the primary market to be analyzed for antitrust purposes." *Olin Corp. v. FTC*, 986 F.2d 1295, 1299 (9th Cir. 1993). Cases applying the *Brown Shoe* factors in defining a "primary market" abound.

Julian O. von Kalinowski et al., *Antitrust Laws and Trade Regulation* § 24.02[3][a] (2d ed. 2021) (collecting cases).[8]

Third, there is no strict requirement that plaintiffs quantify cross elasticity of demand when defining the relevant market.[9] *E.g.*, *Optronic Techs.*, 20 F.4th at 482 (rejecting argument that expert's testimony was insufficient to establish a relevant market because he did not analyze the cross elasticity of demand); *Knutson v. Daily Review, Inc.*, 548 F.2d 795, 804 (9th Cir. 1976) (Other evidence can provide "the groundwork for a

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[8] The district court also suggested that an antitrust plaintiff must proffer "evidence of three or four of these practical indicia." Appx23 n.4. But the *Brown Shoe* factors do not comprise a checklist for the finder of fact to apply mechanically. As the Ninth Circuit has explained, the factors "are not to be used in a 'talismanic fashion' whereby their presence or absence are regarded as mechanically dispositive of the issue." *Kaplan v. Burroughs Corp.*, 611 F.2d 286, 292 (9th Cir. 1979). Under the right circumstances, evidence of one or two factors might be probative.

[9] Cross elasticity of demand measures the responsiveness of demand for one product to changes in the price (or quality) of another product. *TRW, Inc. v. FTC*, 647 F.2d 942, 947 n.7 (9th Cir. 1981); *Cmty. Publishers*, 892 F. Supp. at 1153 n.7 ("When products have 'high' cross-elasticity, it means that small changes in the price or quality of one product [have] dramatic effects on the sales of the other."). As a matter of economics, "[i]t represents the percentage increase in the quantity demanded of the second product divided by the percentage increase in the price of the first product, everything else held constant." von Kalinowski, *supra*, § 24.02[2][b][ii]. "For example, if the demand for margarine increases 200% when the price of butter increases 100%, the cross-elasticity of demand between margarine and butter is 2." *Lenox MacLaren Surgical Corp. v. Medtronic, Inc.*, 762 F.3d 1114, 1120 (10th Cir. 2014).

reasonable determination of the [relevant] product market" notwithstanding the absence of "a precise measurement of the cross-elasticity of demand."); *Pac. Coast Agric. Export Ass'n v. Sunkist Growers, Inc.*, 526 F.2d 1196, 1204 (9th Cir. 1975) (jury able to place "brand" and "export" oranges in the same market even though "[t]here is insufficient evidence in the record to show with any exactitude the degree of cross-elasticity of demand" between them); *see also Brown Shoe*, 370 U.S. at 324–28 (defining market without estimating cross elasticity of demand).

In demanding a "measure" or "estimation" of cross elasticity of demand, Appx25; Appx32, the district court apparently overread *Brown Shoe* and its progeny. There, the Supreme Court stated that the "outer boundaries of a product market are determined by the reasonable interchangeability of use or the cross-elasticity of demand between the product itself and substitutes for it." 370 U.S. at 325.

When courts draw on this formulation, they generally use the term "cross-elasticity of demand" not to mean a specific quantitative measurement, but instead to express the more general concept of economic substitutability at the heart of market definition. *E.g.*, *McWane*, 783 F.3d at 828 ("[A] high cross-elasticity of demand indicates

that the two products in question are reasonably interchangeable substitutes for each other and hence are part of the same market."); *Twin City Sportservice*, 512 F.2d at 1271 ("where there is a high degree of substitutability in the use of two commodities, it may be said that the cross-elasticity of demand between them is relatively high, and therefore the two should be considered in the same market"); 1 Am. Bar Ass'n, *Antitrust Law Developments* § 6B.1.b (2016) ("[C]ourts often use the term 'cross-elasticity of demand' as a synonym for 'reasonable interchangeability of use' rather than as a mathematical measure that may help estimate interchangeability.").

Used in this sense, cross elasticity of demand is not meant to denote a "precise formula," *Cont'l Can*, 378 U.S. at 449, and can be proved through the gamut of market-definition evidence, *e.g., Lenox MacLaren Surgical Corp.*, 762 F.3d at 1121–22 (jury could infer low cross elasticity of demand between medical tools from testimony of a medical expert that substantial prices changes would not lead surgeons to switch devices and from marketing literature); *U.S. Anchor Mfg., Inc. v. Rule Indus., Inc.*, 7 F.3d 986, 995 (11th Cir. 1993) ("other factors [] can serve as useful surrogates for cross-elasticity data"); *Olin Corp.*, 986 F.2d at 1303

(Commission properly relied on "circumstantial evidence" in the form of statements by defendant and a competitor in finding cross elasticity of demand); *Syufy Enters. v. Am. Multicinema, Inc.*, 793 F.2d 990, 995 (9th Cir. 1986) (antitrust plaintiff "did not present direct evidence going to the 'cross-elasticity of demand'" but there was sufficient evidence for a jury to credit plaintiff's market).

Indeed, as a matter of economics, it "is ordinarily quite difficult to measure cross-elasticities of supply and demand accurately." *U.S. Anchor Mfg.*, 7 F.3d at 995. For example, the required data are often unavailable. The difficulty is especially pronounced in some industries, including a few at the heart of today's economy, where products or services are provided free of charge. *See, e.g.*, *FTC v. Facebook, Inc.*, 560 F. Supp. 3d 1, 17–18 (D.D.C. 2021) (sufficiently alleging a product market for "personal social networking services" even though "the products therein are not sold for a price"). As the Supreme Court has stated, "cross-elasticity of demand [is] not to be used to obscure competition but to 'recognize competition where, in fact, it exists.'" *Cont'l Can*, 378 U.S. at 453.

For similar reasons, the court was incorrect to suggest that a plaintiff has to conduct a hypothetical monopolist test. That test provides a structured way of marshalling the available qualitative and quantitative evidence of economic substitutability. But while it is *sufficient* to define an antitrust market, *see, e.g.*, *Saint Alphonsus*, 778 F.3d at 784, it is not a necessary requirement to define a market in every case, *e.g.*, *Optronic Tech.*, 20 F.4th at 482.[10] Indeed, *Brown Shoe* and other long-controlling market-definition decisions defined markets without reference to the hypothetical monopolist test. *E.g.*, *Brown Shoe*, 370 U.S. at 324–28.

[10] Teradata is correct that evidence of prior price discrimination is not required to establish a price-discrimination market as a matter of law. *See* Br. 32. "If a hypothetical monopolist could profitably target a subset of customers for price increases" (*i.e.*, price discriminate), a party "may identify relevant markets defined around those targeted customers." HMG § 4.1.4. Even in the absence of past or current price discrimination, there are some situations where a merger or other anticompetitive conduct could create "a realistic prospect of an adverse competitive effect on a group of targeted customers." *Id.* ("If a hypothetical monopolist *could* price separately and limit arbitrage, [those customers] *would be* vulnerable to a targeted [price increase]." (emphasis added)).

III. Courts Regularly Rely on ADR Analysis in Defining a Relevant Market, Including When Pricing Data Is Unavailable

In excluding Dr. Asker's opinions, the district court apparently took an improperly skeptical view of analyses using aggregate diversion ratio (ADR) and imposed overly rigid requirements for such analyses. These apparent errors are addressed in turn.

1. Contrary to the district court's statement that "ADR analysis has rarely been accepted by courts," Appx.30, courts repeatedly have relied on ADR analysis[11] in defining markets in antitrust litigation. *E.g., Dial Corp. v. News Corp.*, 165 F. Supp. 3d 25, 41–42 (S.D.N.Y. 2016) (declining to exclude expert's critical loss analysis using aggregate diversion ratios); *United States v. Aetna, Inc.*, 240 F. Supp. 3d 1, 34–35, 42 (D.D.C. 2017) (both experts calculated aggregate diversion ratios and court relied in part on plaintiffs' expert in defining product market). The concept is recognized in the Horizontal Merger Guidelines, HMG § 4.1.3

[11] Aggregate diversion ratios may be used in multiple ways in antitrust analysis. Herein, "ADR analysis" refers to the use of aggregate diversion ratios in a critical-loss framework, as described in the following paragraphs. Given, *inter alia*, that much of Dr. Asker's expert report remains under seal, we take no position on how Dr. Asker's analysis should be characterized or on the merits of his analysis.

(discussing "recapture percentage"), and treated as an established market-definition methodology in the secondary literature, *e.g.*, Earl W. Kintner et al., *Federal Antitrust Law* § 37.2a (2021); Serge Moresi et al., *Antitrust Economics for Lawyers* § 1.03 (2022).

In particular, ADR analysis can prove useful in implementing the hypothetical monopolist test. As discussed above, *supra* note 4 & p.16, the hypothetical monopolist test looks to whether a profit-maximizing monopolist of all products within a proposed market likely would apply at least a small but significant and non-transitory increase in price (a SSNIP) on at least one product in that market.[12] If so, the proposed market is broad enough to be a relevant antitrust market; if not, because the price increase would cause sufficient substitution away from products in the proposed market, then the proposed relevant market is too narrowly defined. *See generally* HMG § 4.1.

ADR analysis estimates the profitability of a SSNIP using aggregate diversion ratio (or recapture percentage). The aggregate

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[12] In a case involving an existing alleged monopolist, the hypothetical monopolist test could ask whether a small but significantly *lower* price (or small but significantly *higher* quality) would prevail if there were more than one major firm supplying the candidate product.

diversion ratio represents the lost sales from a SSNIP on one product in the candidate market that are recaptured by other products in the candidate market. To test a candidate market, an economist may compare the aggregate diversion ratio to a threshold that determines whether or not the SSNIP would be profitable.[13] For example, if a hypothetical monopolist of Products A, B, and C imposes a SSNIP on Product A, that SSNIP would be profitable if the hypothetical monopolist recaptures sufficient lost sales of Product A via sales of Products B and C to former customers of Product A.[14] If that SSNIP proves profitable,

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[13] This approach builds on the concept of critical loss, which means the maximum loss of sales that would make a particular price increase (*e.g.*, a SSNIP) unprofitable (the "breakeven" point): if the predicted loss of sales from a SSNIP (or the "actual loss") exceeds the critical loss, that SSNIP would be unprofitable, suggesting that the candidate market is too narrow. *H&R Block*, 833 F. Supp. 2d at 63.

[14] Some courts relying on ADR analysis have framed it as a three-part analysis. First, the economist "determine[s] the threshold aggregate diversion ratio, which is the percentage of customers that would need to stay within the [candidate] market to make a price increase profitable." *FTC v. Sysco Corp.*, 113 F. Supp. 3d 1, 34 (D.D.C. 2015). Second, the economist "determine[s] the *actual* aggregate diversion—that is, the actual percentage of customers of a single [product in the candidate market] that would switch to another [product in the candidate market] after a price increase." *Id.* Third, the economist "compare[s] the two: if the actual aggregate diversion is greater than the threshold ratio, then the hypothetical monopolist could profitably raise prices and the candidate market is [a] relevant product market." *Id.*; *see also FTC v. Wilh. Wilhelmsen Holding ASA*, 341 F. Supp. 3d 27, 57 (D.D.C. 2018).

that result can suggest that Products A, B, and C comprise a relevant market.

2. The district court also appeared to limit strictly the type of evidence that can be used to estimate an aggregate diversion ratio, without adequate justification. Dr. Asker used Customer Relationship Management (CRM) data, which here included the number of times competitors are mentioned in sales representatives' reports, to estimate the aggregate diversion ratio. Appx29. In finding Dr. Asker's analysis unreliable, the court stressed that Dr. Asker "did not build a database of the type prices [sic] or rely on the price ultimately paid by the customer." Appx31.

A categorical rule requiring price-based data to measure aggregate diversion would be improper. Data directly recording customer response to a change in price (or other terms) are frequently unavailable. Accordingly, economists use—and courts have accepted—a variety of types of evidence to estimate how consumers would react to a particular change in price or other terms. *See generally* HMG § 4.1.3 ("In considering customers' likely responses to higher prices, the Agencies take into account any reasonably available and reliable evidence.");

Antitrust Section, Am. Bar Ass'n, *Market Definition in Antitrust: Theory and Case Studies* 1.C.1.a (2012) (evidence for estimating actual loss "varies depending on the availability of data," ranging from "a full econometric analysis" to "qualitative information or experience").

Data regarding how customers have switched among products in the past, even if not limited to instances of a change in price, can provide information about how they likely would respond to a price change. *See, e.g.*, *Aetna*, 240 F. Supp. 3d at 34 (using, *inter alia*, switching data in calculating aggregate diversion ratio); *H&R Block*, 833 F. Supp. 2d at 65 ("it was reasonable to use switching data as a proxy for diversion, especially since no more refined historical data apparently exists"). Also, data capturing alternative products perceived as competitive threats by sales personnel, as is sometimes recorded in CRM data, can illuminate likely responses to price changes. *See, e.g.*, *Wilh. Wilhelmsen*, 341 F. Supp. 3d at 57 (using Salesforce data, *inter alia*, to calculate aggregate diversion ratio); *Sysco Corp.*, 113 F. Supp. at 35 (database used by sales representatives that included a "main competition" field used by the expert to estimate aggregate diversion ratio).

Documents and testimony also inform estimates of customer reaction to a change in price or other terms. *Cf.* HMG § 4.1.3 (the hypothetical monopolist test can serve as "a useful methodological tool" even if not performed quantitatively). For example, documents showing that the merging firms view each other as significant competitors can be strong evidence that significant numbers of consumers would switch between the merging firms (rather than to firms outside the candidate market) in response to a change in their relative prices. *See, e.g.*, *FTC v. Tronox Ltd.*, 332 F. Supp. 3d 187, 205 (D.D.C. 2018) (estimating actual loss from, *inter alia*, document stating that a substitute "could take up to 15 percent of [] applications"). Similarly, evidence that two firms attempt to attract the same type of consumer or that one firm generally responds to the competitive initiatives of other firms also suggests where lost customers would be diverted. *See generally* HMG § 4.1.3 (potential evidence to implement the hypothetical monopolist test includes surveys, business documents, product characteristics, and legal and regulatory requirements); Moresi, *supra*, § 1.03[1] (estimates of actual loss might "rely on testimony and documentary evidence that the actual loss would be smaller (or larger) than the critical loss").

Thus, a categorical rule requiring price-based data to measure aggregate diversion would be contrary to the flexible nature of market definition, economic practice, and the rules of evidence. "Experts working in specialized, scientific, and uncertain fields regularly 'extrapolate from existing data.'" *Elosu v. Middlefork Ranch Inc.*, 26 F.4th 1017, 1026 (9th Cir. 2022) (quoting *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997)). Even where the data are "imperfect, and more (or different) data might have resulted in a 'better' or more 'accurate' estimate in the absolute sense," it remains the province of the factfinder to assess the value of the expert's analysis. *i4i Ltd. P'ship v. Microsoft Corp.*, 598 F.3d 831, 856 (Fed. Cir. 2010); *see also, e.g.*, *In re Scrap Metal Antitrust Litig.*, 527 F.3d 517, 531 (6th Cir. 2008) ("The question of whether [the expert's] opinion is accurate in light of his use of the SPB data goes to the weight of the evidence, not to its admissibility."). And even if the evidence of diversion has significant limitations and is not alone sufficient to define a market, that analysis, considered in

conjunction with other evidence, nonetheless might support a relevant market.[15]

[15] *See, e.g.*, *Sysco*, 113 F. Supp. 3d at 37 ("the court hesitates to rely on [the plaintiff's expert's] precise aggregate diversion percentages," but "when evaluated against the record as a whole, [his] conclusions are more consistent with the business realities . . . than [those of defendants' expert]"); *H&R Block*, 833 F. Supp. 2d at 60 ("The Court finds that the analysis performed by the plaintiff's expert tends to confirm [the] relevant product market, although the available data in this case limited the predictive power of the plaintiff's expert economic models.").

CONCLUSION

The Court should correct any errors in the district court's articulation of market-definition principles.

Respectfully submitted.

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CERTIFICATE OF COMPLIANCE

1. This brief complies with the type-volume limit of Fed. Circuit Rule 29(b) because, excluding the parts exempted by Fed. R. App. P. 32(f), the brief contains 6,000 words.

2. This brief complies with the typeface requirements of Fed. R. App. P. 32(a)(5) and the type-style requirements of Fed. R. App. P. 32(a)(6) because the brief has been prepared in Microsoft Word 2019, using 14-point Century Schoolbook font, a proportionally spaced typeface.

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CERTIFICATE OF SERVICE

I certify that on June 7, 2022, I caused the foregoing to be filed through this Court's CM/ECF system, which will serve a notice of electronic filing on all registered users.

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